MINISTRY OF EDUCATION AND SCIENCE OF THE KYRGYZ REPUBLIC
OSH STATE UNIVERSITY
INTERNATIONAL MEDICAL FACULTY
DEPARTMENT OF HUMAN ANATOMY, HISTOLOGY AND PHYSIOLOGY

TRAINING PROGRAM
(Syllabus)

BY DISCIPLINE: Human anatomy 2

for full-time students
in the specialty " 560001-General Medicine "

Specialty (direction)	General medicine (GM)"	Course code	560001
Language of instruction	English	Discipline	Human Anatomy 2
Training year	2025-2026	Quantity credits	5
Information about the teacher :	Asanbek kyzy K	Semester :	II semester
E-mail	kasanbekkyzy@oshsu.kg	Opening hours:	From Monday-Saturday daily from 8:00 to 17:30.
Consultations (time / aud .)	Room 106	Location (building / room)	106 Morpho Corpus
Form of study (full-time/part-time/evening/distance)	on constant basis	Course type: (required)	Necessarily

OSH –202 5

1. OBJECTIVES OF THE DISCIPLINE

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The purpose of studying normal anatomy is for the student to acquire knowledge about the structure of the human body, the structure of organs and organ systems, their topography and development based on modern achievements in macro- and microscopic anatomy, as well as the formation of general professional medical competence in matters of the structural organization of the main processes of the body's vital activity.

Objectives of the discipline:

- To develop knowledge of the structure of the human body, both as a whole and its individual organs, and their topographic relationships of systems, X-ray imaging based on modern achievements of macro- and microscopic anatomy;
- To develop the skills to navigate the complex structure of the human body, to accurately and precisely find and determine the locations and projections of organs and their parts on the surface of the body, i.e. mastery of "anatomical material" for understanding pathology, diagnosis and treatment;
- To examine individual, gender and age-related characteristics of organs and systems, including organogenesis, to show variants of variability and developmental defects.
- To develop a scientific understanding of the interdependence and unity of structure and function, using the principles of an integrated approach and synthetic understanding of both individual organs and the organism as a whole, their variability in the process of phylo- and ontogenesis;

To cultivate ethical standards of behavior in the "anatomical theater", a respectful and careful attitude towards the object being studied – the organs of the human body, towards the corpse, which are studied in the name of a living person;

2. LEARNING OUTCOMES OF THE DISCIPLINE

3. Prerequisites	**Histology,** Latin, : Chemistry, Biophysics, SPD : Molecular Biology and Medical Genetics, Medical Biology,	
4. Post-requisites	Topographic anatomy. Pathological anatomy . Clinical anatomy.	
Co-requisites (as needed)	Physiology, Medical anthropology	
Results training disciplines		
By the end of the course, the student: will achieve the following learning outcomes (ROd) corresponding to the expected results of mastering the educational program (ROop) and will have the corresponding competencies:		
RT (result training) OOP	RT disciplines	Competencies

RJSP-1: able to use basic knowledge of the humanities, natural sciences and economics in professional work;	**ROD-1:** is able and ready to analyze the basic physical phenomena and biological patterns underlying the processes occurring in the human body, the origin and development of life, human anthropogenesis and ontogenesis;	**Knows and understands** : • the main directions and stages of development of anatomical science, its importance for medicine and biology, methods of anatomical research; • the basic laws of development and vital activity of the human body, based on the structural organization of organs and systems; **Can:** accurately and correctly identify parts and areas of the human body; determine the main bone formations, joint spaces, muscle contours and their projection onto the body surface; **Owns skills:** informational search in SCOPUS, WoS , PubMed And etc., and applications medical-anatomical conceptual apparatus and the ability to use it Excel , Google ChatGPT , Canva
RJSP -2 Ability to use modern communication technologies, including in a foreign language, for academic and professional interaction	**ROd-2:** able and ready to understand issues of structural and functional organization of organs and systems, determining their location and projection on the surface of the body, correct description using anatomical terms used in modern medical practice, taking into account age, gender and individual	**Knows And understands** : anatomical and topographic relationships between individual organs and parts of the human body; • blood supply, lymph drainage and innervation of organs; • anatomical terms according to the International Anatomical Nomenclature. **Can:** accurately and reliably determine the location of the main blood vessels and nerves, and the pulsation points of the arteries. **Possesses skills** in basic information transformation technologies: independent work with educational literature on paper and electronic media, Internet resources on human anatomy;
RJSP 7 – Able to apply basic knowledge in the field of diagnostic activities to solve professional problems	**PC-15** : able and ready to analyze the patterns of functioning of individual organs and systems, use knowledge of anatomical and physiological characteristics, basic methods of clinical and laboratory examination and assessment of the functional state of the body of an adult and children, for timely diagnosis of diseases and pathological processes	**Knows and understands:** the structure, functions, topography and development of all organs and systems of the body, taking into account age, gender and individual characteristics; • possible structural variants, main anomalies and developmental defects of organs and their systems; **Can:** accurately and reliably determine the location and projection of organs on the surface of the body and in relation to the skeleton; **Proficiency:** Capable show and palpate the main bone landmarks on the human body and correctly name them in Latin, and also use the acquired knowledge for modern diagnostics of diseases and pathological processes
RJS11 - Able to apply basic knowledge in the field of scientific research activities to solve professional problems	**ROd-3** : able and ready to use educational, scientific, popular science literature to carry out scientific research using anatomical methods , taking into account the principles of systemic anatomy, to determine the body type based on anthropometric data	**Knows and understands** : Uses knowledge and modern methods and advanced training courses that require an understanding of deep anatomical structures. **Can:** carry out search, critical analysis and synthesis of information, apply a systematic approach to solving the assigned tasks **Can:** make judgments based on the information received, taking into account social, ethical and scientific considerations using Internet resources, and is also able and ready to plan and conduct scientific research PC-32

5. Technological map of the discipline in 2 semesters

Discipline	Credit	A ud. hour	S/W S/Wt	1-module (25 points)				2-module (25 points)				Exam (50 points)
		40%	60 %	A uh. watch		S/W S/Wt (s)	RK (r)	Audience hours		S/W S/Wt (s)	RK (r)	IR (E)
				lek	pr			lek	pr			
PC	5	60	90	24	36	9 / 4		24	36	9/4		
OOC	5	60	90	2 4	36	9 / 4		24	36	9 / 4		
Map savings points				4	4	8	9	4	4	8	9	50
Module and exam score results				(M= $t_{avg.}$ + r+s) to 25				(M= $t_{avg.}$ + r+s) to 25/				50
				$R_{add.} = M_1 + M_2$ (30- 50)								
Final grade				$I = R_{add.} + E = 100$								100

6. Map of accumulation of points for the discipline "Human Anatomy2" in terms of modules (2 semester, 2025-2026 academic year, specialty: 560001-medical care "GM")

No.	Name groups Name / Surname student	Average score of current practical classes 4 points	Lecture 4 points	SWw T 8 points	Module 9 points	General 25 points
1.						
2.						

Module	($M = t_{avg\ 8.} + r\ 9 + s\ 8$)	= 25
$R_{add.} =$	$M_1 + M_2$	50=25+25
$I =$	$R_{add.} + E$	100=50+50

$T_{avg\text{-}Practical\ classes}$

r 9-module test

s 8- S/Work

7. Brief summary of the discipline:

• Cardiovascular and lymphoid systems:
- arterial system;
- venous system;
- lymphatic system;
- organs of the immune and lymphatic systems, endocrine glands;

• Nervous system and sense organs:
- central nervous system;
- peripheral nervous system;
- autonomic nervous system;
- sense organs and skin

8. Calendar and thematic plan of lectures for students of the specialty 560001 - General Medicine (LP) (2 nd semester 2025-2026 years .)

No. week .	Name topics	Quantity hours	Points			
			visit pup py ie	Test (For TC), oral, written th survey	manage ment lecture noteboo k	total
	1-module					
1.	**Introduction to neurology . Functional anatomy of spinal cord.**	*2 h*	-	3	1	4
2.	**Functional anatomy of brainstem.**	*2 h*	-	3	1	4
3.	**Diencephalon: structure, topography of gray and white matter, III ventricle.**	*2 h*	-	3	1	4
4.	**Functional anatomy of the subcortical nuclei, olfactory lobe, limbic system**	*2 h*	-	3	1	4
5.	**Functional anatomy of the telencephalon. Localization of functions (centers) in the cortex of the cerebral hemispheres.**	*2 h*	-	3	1	4
6.	**Ascending and descending tracts of brain and spinal cord**	*2 h*	-	3	1	4
	Module No. 1: " Nervous system "					
7.	**General anatomy and development of arterial system. Heart**	*2 h*	-	3	1	4
8.	**General anatomy and development of venoussystem.Fetal blood circulation**	*2 h*	-	3	1	4
9.	**General anatomy and development of lymphatic system**	*2 h*	-	3	1	4
10.	**General anatomy and development of cranial nerves**	*2 h*	-	3	1	4
11.	**General anatomy and development of spinal nerves**	*2 h*	-	3	1	4
12.	**AutonomicNervous system. Autonomic innervation of internal organs.**	*2 h*	-	3	1	4

Calendar-thematic plan practical classes

No. week.	Name topics	Quantity hours	Criteria for assessing the oral response			
			Great level of knowledge with creative approach To topic.	Good level of knowledge about the topic	Average level Knowledge about the topic	total
1-module						
1.	General overview of the nervous system. Spinal cord: structure, topography of gray and white matter and its membranes. https://www.youtube.com/watch?v=RNLceVI8jcc	2 h	4	3	2	4
2.	Base and midline section of the brain, its sections.. Medulla oblongata: https://www.youtube.com/watch?v=4GIcrYDnYiI	2 h	4	3	2	4
3.	Cerebellum: Pons nuclei, connections with other parts of the brain. https://youtu.be/wuXH1b3WjvQ?si=gludK4h-JShE98d7	2 h	4	3	2	4
4.	Midbrain: structure, gray and white matter topography, cerebral aqueduct.. Rhomboid fossa. https://youtu.be/tgdd34PR8Us?si=Q-E2JihgiOEZgnZa	2 h	4	3	2	4
5.	Diencephalon: structure, topography of gray and white matter, III ventricle.	2 h	4	3	2	4
6.	Forebrain: grooves and sulci of the cerebral hemispheres. Localization of functions in the cerebral cortex.	2 h	4	3	2	4
7.	Fore brain: internal structure of the hemispheres(Bazal ganglion, limbic system) .Lateral ventricles. Meningeal layers of the brain. Pathways for the outflow of cerebrospinal fluid. https://youtu.be/WZUYONhVWC4?si=g8n1_SW_V9lOT937	2 h	4	3	2	4
8.	Ascending, Descending tracts of spinal cord and brain. https://youtu.be/_G-d8gKIlOw?si=xUm5z9jmfUTda65q	2 h	4	3	2	4
9.	Sense organs, their classification. The organ of vision. The structure of the eyeball.. The vestibular cochlear organ, its parts. The structure of the outer, middle and inner ear https://youtu.be/Cnk-jO2Wfas?si=B1buuuP9IocbEJjw	2 h	4	3	2	4

	https://youtu.be/DkILGNJgS2M?si=rdZKfSQ3Rfok0XCb					
	2-module Cardio-vascular system + PNS					
10.	Aortic arch and its branches. Common, external and internal carotid arteries. Subclavian artery. Circle of Willis. https://youtu.be/4vTNmwSV6t0?si=2-0R0SAT-GyMKbK-	*2 h*	4	3	2	4
11.	Thorax aorta. Abdominal aorta. Common, external and internal iliac arteries. Lower limb arteries https://youtu.be/4vTNmwSV6t0?si=2-0R0SAT-GyMKbK-	*3h*	4	3	2	4
12.	VCS and VCI Portal vein. Venous anastomoses. https://youtu.be/QWj8idmxlEw?si=4NJAJJZz1mEgnrdd https://youtu.be/9e_ap_x2FYw?si=wjYezmPVqXwcyDWj	*3 h*	4	3	2	4
13.	The lymphatic system: trunks and tributaries. Regional lymph nodes. Right lymphatic duct https://youtu.be/QD9AdNXSQe4?si=Qj3saBZHaoQ4YFDU	*3h*	4	3	2	4
14.	Peripheral nervous system: cranial nerves (sensory and motor, mixed areas of innervation. Cervical, Brachial, plexuses, Lumbar, Sacral plexuses https://youtu.be/UQtgscgMIbE?si=bmNdrqO5hIbusWZP https://youtu.be/RuH4fgkf2Bw?si=ba52-Lovy-aGmuYb	*3 h*	4	3	2	4
15.	Sympathathic part of the autonomic nervous system. Innervation of internal organs. Parasympathathic part of the autonomic nervous system. Innervation of internal organs https://youtu.be/DPWEhl7gbu4?si=MkIVy_KKlHbwxcY5	*3 h*	4	3	2	4
	Total hours / average current score	**36**	**1**	**2**	**1**	**4**

8 . Individual Job students (SRS)

Schedule of self work on topics for the discipline human anatomy : for 1 semester

No.	Topics on SRSP	Task for the SRSP	Duration of an hour	The method for scoring	Literatures	The room is not	Completion date
1.	**Topography XII Cranial nerves and their innervation**	1. Discation 2. Survey 3. Quiz	1 hour	1. Write an essay on the topic: 2. Create a presentation and report on the topic:	1. Padlet 2. Tarsia 3.RBL	Main and additional literature	08.09-18.09

2.	**Rhombencephalon. IV ventricle**	1. Discussion 2. Survey 3. solving a series of problems	1 hour	1. Draw a diagram of the rhomboid fossa and indicate the topography of the cranial nerve. 2.Demonstration on Visible body	1. Case method 2.sit tasks	Main and additional literature	19.09-29.09
3.	**Lateral ventricles. Cerebrospinal fluid circulation system .**	1. Discussion 2. Survey 1. 3. solving a series of problems	1 hour	1.Create PPT 2. Demonstrations on dummies	1. Quiz 2. RBL	Main and additional literature	30.09-10.10
4.	**Sense organ: Skin and its derivatives**	1. Discussion 2. Survey 1. 3. testing	1 hour	1. Write an essay on the topic: 2. Create a presentation and report on the topic:	1.3 D model 2. Microscopic examination of the skin structure	Main and additional literature	11.10-21.10
No.	**Topics on SRSP**	**Task for the SRSP**	**Duration of an hour**	**The method for scoring**	**Literatures**	**The room is not**	**Completion date**
1.	**Coronary vessels. Circle of Viliziev**	1. Discussion 2. Survey 3. solving a series of problems	1 hour	1. Make a model on the topic 2. Create a report on the topic	1. Case method 2.sit tasks	Main and additional literature	05.11-10.11
2.	**Blood supply to the knee joint. Arteries of the foot**	1. Discussion 2. Survey 3. testing	**1 hour**	1. Create a presentation 2. report on the topic:	1. Tarsia 2 . Word wall 3. RBL	Main and additional literature	11.11-20.11
3.	**Features of blood circulation in the fetus and its postnatal restructuring**	1. Discussion 2. Survey **3.** filling in the workbook	**1 hour**	1. Create a presentation 2. report on the topic:	1. Quiz 2. RBL 3. padlet	Main and additional literature	21.11-28.11
4.	**Pathologies of cranial nerves and their pathways**	1. Discussion 2. Survey 3. testing	**1 hour**	1.Draw a diagram of the ref arc and indicate 2.Demonstratio	1. Word wall 2. RBL 3. padlet	Main and additional literature	29.11-10.12

				n on Visible body			
5.	**Autonomic reflex arc.**	1. Discussion 2. Survey 3. solving a series of problems	**1 hour**	1. Draw a diagram of the rhomboid fossa and indicate the topography of the cranial nerve. 2.Demonstration on Visible body	1. Case method 2.sit tasks	Main and additional literature	11.12-25.12

9. Educational, methodological and informational materials

Main literature:

1. *Chaurasia · s BD* HUMAN ANATOMY: Regional and Applied / Dissection and Clinical) . Volume 1-4. – all editions ;
2. *Chaurasia · s BD* HANDBOOK OF GENERAL ANATOMY . – all editions ;

Additional literature :

1. ATLAS OF HUMAN ANATOMY, Professional Edition, 7th Edition.
2. CLINICAL ANATOMY: Applied Anatomy for Students and Young Physicians, 14th edition.
3. GRAY'S ANATOMY for Students, 4th Edition.
4. HUMAN ANATOMY AND PHYSIOLOGY, 11th edition.
5. ANATOMY COLORING BOOK.
6. *Sobotta* . ATLAS OF HUMAN ANATOMY, 15th edition.
7. *Kolesnikov L.L., Nikityuk D.B., Klochkova S.V., Stelnikova I.G.* TEXTBOOK OF HUMAN ANATOMY. Vol . 1-3. – M.: GEOTAR - MEDIA , 2018. – 320 p.
8. *Clinical neuroanatomy ; Vishram Sing*
9. *Clinical neuroanatomy ; Richard , Snell .*
10. *Dr. Rachel Koshy " Cunningham's Manual of Practical Anatomy"*

Additional literature:

6. CENTRAL NERVOUS SYSTEM AND SENSE ORGANS (workbook). O.V.Kalmin., K.Sh.Sakibaev., I.V.Bochkareva et al. - Osh, Penza: 2019. - 142 p.
7. ANGIONEUROLOGY OF THE HEAD AND NECK (study guide). O.V.Kalmin., K.Sh.Sakibaev., K.Asanbek kyzy et al. - Osh, Penza: 2019. - 102 p.
8. ANGIONEUROLOGY OF INTERNAL ORGANS AND WALLS OF CAVITIES (study guide) O.V.Kalmin., K.Sh.Sakibaev, U.A. Ashimov. – Osh, Penza: 2019. – 112 p.
9. ANGIONEUROLOGY OF THE EXTREMITIES (study guide). O.V.Kalmin., K.Sh.Sakibaev, A.M.Ergeshova and all. – Osh, Penza: 2019. – 102 p.
10. TOPOGRAPHICAL ANATOMY (workbook). O.V.Kalmin., K.Sh.Sakibaev, Dzh.Dzholdubaev and others. – Osh, Penza: 2019. – 112 p.

Software, electronic sources

- http://anatomy-portal.info
- http://www.ksma.edu.kg/
- http://www.library.ru/
- http://www.medicalstudent.com

- http://www.medicinform.net
- http://www.mma.ru/
- http://www.rmj.ru
- http://www.rsmu.ru/

1 0. SCORING INFORMATION *(SCORE TABLE)*

4.5. **Scale ratings academic academic performance:**

Letter grading system	Digital equivalent GPA points	Point system (rating)	Gradation	Characteristics of academic performance
A+	4.0	95 - 100	Great	The student not only demonstrated knowledge of the material, but was also able to confidently apply it in practice situations. The rating indicates a high level mastering the subject.
A	3.5	90 - 94		The student demonstrated deep knowledge and skills apply their on practice, very minor errors.
B+	3.0	85 - 89	Very good	Result higher average, But with some minor flaws. The student demonstrated good understanding key concepts.
IN	2.5	80 - 84		Good knowledge subject With small mistakes. The student has a confident command of the material
C+	2.0	75 - 79	Fine	The student has mastered the basic elements subject And can apply knowledge. This corresponds to sufficient level.
WITH	1.5	70 - 74		Knowledge of the material is at a sufficient level, although there are mistakes or shortcomings .
D+	1.0	65 - 69	satisfactorily	The level of knowledge is acceptable. Student completed minimum requirements
D	0.5	60 - 64		Level knowledge acceptable, but with noticeable shortcomings. Student completed minimum requirements
FX	0,0	30 - 59	Not satisfactorily	Student Not took possession material in the required volume and did not meet the requirements. Necessary retake .
F	0,0	1- 29		The student did not achieve the minimum level of knowledge or skills required to pass a subject or exam. Necessary refresher course of study of the discipline

W	-	-		An assessment confirming the student's refusal to continue studying this subject.
X	-	-		A student may be suspended from studying a discipline for academic reasons by administrative order.

1. EVALUATION POLICY

No.	Audit lesson	attendance	Test (For TC), oral, written th survey	Introduction to the Lecture Notebook	Total
1.	Lecture	-	3	1	4

No.	Classroom assignments	attendance	test	Oral response	Total
1.	Practical lesson	-	1	3	4

No.	Out of Auditory Lesson	abstract	drawing	Latin terminology	Presentation student scientific research	scientific projects	Total
1.	S/Wt	1	1	1	3	2	8

12. COURSE POLICY

1. Attendance And participation V classes
   Class attendance is mandatory. Students are expected to arrive to all classes on time, prepare for them by studying the required literature, express your own opinion, open, to show respect To the opinion of others.
2. Academic honesty and plagiarism
   Academic honesty And integrity include V myself obligation do not participate V acts dishonesty: copying, plagiarism, issuance stranger works for one's own, using sources without citation, promoting academic dishonesty of other students, etc. More information on the principles of academic honesty can be found at the link: https://www.oshsu.kg/ru/page/9
3. Deadlines And fines for lateness with submission of works
   Deadlines for homework, projects, and other assignments are listed in the syllabus. And V Google Classroom . Violation deadlines without respectful reasons, entails receiving low current grades, failure to complete assignments - to not being allowed to take the exam.
4. Rules design works And links
   Design written works should correspond requirements And teacher assignments posted in advance in Google Classroom .
7. Consultations And office watch teacher
   Schedule consultations And watch reception teacher For individual consultations and reception of independent work, working off absences: according to the schedule

8. Behavior students

The classroom is a safe place to receive education regardless of race/ethnicity, religious beliefs, socio-economic status status And T. d. Intimidation And persecution are unacceptable. If If you notice bullying or harassment, report it to your instructor. Behavior that disrupts others' learning, such as talking to others while the instructor is teaching, other students doing assignments, or using a mobile phone to text, is not acceptable.

9. Order solutions problems

✓ Any question that arises in the process of studying the discipline must first be discuss With teacher. At impossibilities come To a solution that suits both parties, this issue can be discussed with the head of the program or department ***Topics The course of lectures*** covers problematic issues from the relevant sections of human anatomy.

✓ ***Practical classes*** include mastering:

- knowledge Latin (Greek) terminology ;
- knowledge of the sources and patterns of embryonic development, the structure of human organs and organ systems, clinical methods of their study (X-ray anatomical method, computed tomography, magnetic resonance imaging (MRI), ultrasound examination (US), endoscopy, etc.);
- dissection skills, demonstration of anatomical structures on natural preparations, dummies, and models;
- assessment of age, gender and individual characteristics of the structure of human organs;
- solving situational problems that have a clinical and anatomical basis.

✓ ***Independent (extracurricular) work*** involves mastering the following skills:

- anthropometric (macroscopic) description organs ;
- demonstrate organs, their parts and other formations on preparations ;
- make diagrams and drawings based on the topic material;
- interpret visualized results of clinical examination methods (reading X-rays, tomograms, etc.)

✓ **Individual educational and research (UIRS)** or scientific research (NIISR) work of students (optional) involves :

- preparation of a review of scientific literature (abstract);
- preparation of illustrative material on the topic under consideration (multimedia presentation, set of tables, diagrams, drawings, etc.);
- production of educational and museum natural preparations and models ;
- conducting scientific research within the framework of the department's student scientific circle;
- participation in scientific state budget topics of the department;
- participation in the Olympics, etc.

B) Monitoring of the assimilation of the topic is carried out in practical classes in accordance with specific goals. It is recommended use next forms current control level preparations students :

- written (or computer) testing in the amount of tests;
- answering tickets and resolving situational problems;
- control of practical skills in the preparation and demonstration of anatomical preparations with subsequent analysis and assessment of the structural features of human organs;
- analysis of topographic and anatomical relationships of human organs and systems (knowledge of the basics of clinical anatomy);
- analysis of the sources and patterns of prenatal and early postnatal development of human organs, variations in organ variability and developmental defects.

The final assessment of the module's mastery is carried out upon its completion and includes:

- oral interview on natural anatomical preparations (testing practical skills).
- computer or written test control based on the volume of test tasks and situational tasks of the test paper (semantic modules);

13. LIST OF QUESTIONS AND TASKS ON TOPICS AND FORMS OF CONTROL

Final control questions

I. On general theoretical issues. And on the history of anatomy

II. Anatomy of the cardiovascular system

1. General anatomy of blood vessels. Microcirculatory bed. bed.
2. Arterial anastomoses and venous anastomoses. Paths roundabout current blood .
3. Peculiarities blood supply fruit .
4. Heart: structure and topography. Conduction system of the heart.
5. Chambers of the heart, structure of the myocardium of the atria and ventricles.
6. Heart valves, their structure, projection onto the chest wall.
7. Pericardium, its structure, topography; pericardial sinuses.
8. Arteries of the heart. Features and variants of their branching. Veins. from the heart.
9. Innervation of the heart. Extracardiac and intracardiac plexuses.
10. Aorta and its parts. Branches of the arch and thoracic part of the aorta, their topography .
11. Parietal and visceral (paired and unpaired) branches of the abdominal aorta.
12. Common, external and internal iliac arteries, their branches , branching points.
13. External carotid artery, its topography, branches and areas supplied by them.
14. Internal carotid artery, its topography, branches and areas supplied by them.
15. Subclavian artery: topography, branches and areas of blood supply.
16. Arteries of the brain, Great artery (Circle of Willis).
17. Axillary and brachial arteries: topography, branches and areas of blood supply.
18. Arteries of the forearm: topography, branches, areas of blood supply .
19. Arteries of the hand. Arterial palmar arches and their branches.
20. Femoral artery: topography, branches and areas of blood supply .
21. Popliteal artery, its topography and branches. Blood supply knee joint .
22. Arteries of the leg: topography, branches and areas of blood supply.
23. Arteries of the foot: topography, branches, areas of blood supply.
24. The superior vena cava, sources of its formation and topography.
25. Azygos and hemiazygos veins, their tributaries and anastomoses.
26. Brachiocephalic veins, roots and tributaries, their topography.
27. Sinuses of the dura mater and diploic veins.
28. Intracranial and extracranial pathways of venous blood outflow from the brain.
29. Inferior vena cava, sources of its formation and topography. Roots and tributaries.
30. Portal vein. Roots and tributaries, their topography. Portal vein anastomoses.
31. Veins of the upper limb, their anatomy , topography, anastomoses.
32. Veins of the lower limb, their anatomy , topography, anastomoses.

III. Organs lymphatic and immune systems

1. Principles buildings lymphatic systems .
2. Thoracic duct, its formation, structure, topography, place of entry.
3. Right lymphatic duct, its formation, topography, place of entry.
4. Lymph node as an organ. Classification of lymph nodes.
5. Anatomy and topography of the lymphatic vessels and nodes of the head and neck.
6. Anatomy and topography of the lymphatic vessels of the nodes of the upper limb.
7. Anatomy and topography of the lymphatic vessels of the nodes of the lower limb.
8. Lymphatic bed of the lungs and topography of the lymph nodes of the thoracic cavity.
9. Anatomy and topography of the lymphatic vessels of the nodes of the abdominal organs.
10. Anatomy and topography of the lymphatic vessels of the pelvic nodes.
11. Central organs of the immune system: bone marrow, thymus. Their topography.
12. Peripheral organs of the immune system. Their topography.
13. Spleen: development, topography, structure, blood supply and innervation.

IV. Anatomy central nervous systems

1. Nervous system. Classification. Concept of neuron. Receptors, their types.
2. Spinal cord: its development, structure, topography. Gray and white matter.
3. Brain development - brain vesicles and their derivatives .
4. Sulci and convolutions of the superolateral surface of the cerebral hemispheres.
5. Sulci and convolutions of the medial and basal surfaces of the cerebral hemispheres.
6. The structure of the cerebral cortex and associative pathways.
7. Anatomy and topography of the basal ganglia and internal capsule.
8. Anatomy and topography of the corpus callosum, fornix and commissures .

9. Anatomy and topography of the lateral ventricles of the brain and their walls.
10. Anatomy and topography of the olfactory brain.
11. Anatomy and topography of the diencephalon. Nuclei and pathways.
12. Anatomy and topography of the midbrain. Nuclei and pathways.
13. Anatomy and topography of the bridge. Nuclei and pathways.
14. Anatomy and topography of the cerebellum. Nuclei and pathways.
15. Anatomy and topography of the medulla oblongata. Nuclei and pathways.
16. Anatomy of the rhomboid fossa, its relief. Projection nuclei cranial nerves .
17. Ventricles of the brain, walls . Paths of cerebrospinal fluid outflow.
18. Reflex arc. Classification of brain pathways.
19. Conducting pathways of pain and temperature sensitivity . Topography.
20. Conducting pathways of tactile sensitivity. Topography.
21. Paths proprioceptive sensitivity . Topography .
22. Medial lemniscus, fiber composition, topography.
23. Motor pyramidal tracts. Topography
24. Reticular formation of the brain and its composition. Topography.
25. The limbic system, its nuclei, location in the brain.
26. The membranes of the brain and spinal cord. spaces.
27. Sinuses of the dura mater. Structure, then geography.

V. Anatomy peripheral nervous systems

1. Spinal nerve, its formation, branches. Posterior branches
2. Cervical plexus, its topography, nerves, areas of innervation .
3. Branches of the supraclavicular part of the brachial plexus, area of innervation .
4. Branches of the subclavian part of the brachial plexus, area of innervation .
5. Innervation of the skin of the upper limb: origin and geography of nerves.
6. Innervation of muscles and skin of the hand. Origin and topography nerves .
7. Intercostal nerves, their branches, areas of innervation.
8. Lumbar plexus, its topography, nerves, areas of innervation .
9. Sacral plexus, its topography, nerves, areas of innervation .
10. Sciatic nerve, its branches, areas of innervation.
11. Innervation of the skin of the lower limb. Origin and geography of nerves.
12. Olfactory and optic nerves. Topography of the conduction pathway.
13. Oculomotor, trochlear and abducens nerves, their anatomy and topography.
14. The trigeminal nerve, its branches, their anatomy, topography, areas of innervation.
15. The facial nerve, its branches, their anatomy, topography, areas of innervation.
16. The vestibulocochlear nerve, its anatomy, topography, areas of innervation.
17. The glossopharyngeal nerve, its branches, their anatomy, topography, areas of innervation.
18. The vagus nerve, its branches, their anatomy, topography, areas of innervation.
19. Accessory and hypoglossal nerves: topography, branches, areas of innervation.
20. Parasympathetic division of the autonomic nervous system (distribution of branches).
21. Sympathetic division of the autonomic nervous system (distribution of branches).
22. Cervical sympathetic trunk, nodes, branches, innervation zones.
23. Thoracic sympathetic trunk, nodes, branches, innervation zones.
24. Lumbar and sacral sections of the sympathetic trunk, nodes, branches.
25. Sympathetic plexuses of the abdominal cavity and pelvis.\

VI. Anatomy organs feelings (blood supply , innervation , lymph drainage)

1. The organ of hearing and balance: general structure and functional features.
2. The outer ear and the middle ear. Parts, structures.
3. Inner ear. Conducting pathway of the vestibular and auditory analyzer.
4. The organ of vision: general plan of structure. Conducting path visual analyzer .
5. Auxiliary device ocular apples .
6. Organs of taste and smell. Their structure, topography.
7. Anatomy of the skin and its derivatives. Mammary gland : topography , structure.

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